



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,479	08/01/2001	Robert Lindsay Mailler	PIZ-1010/00	8160

7590

12/17/2002

Ronald W Citkowski  
Gifford Krass Groh Sprinkle Anderson & Citkowski  
280 North Old Woodward Avenue Suite 400  
Birmingham, MI 48009

EXAMINER

TRAN, DALENA

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/830,479

Applicant(s)

MAILLER, ROBERT LINDSAY

Examiner

Dalena Tran

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: ASSISTANT COMMISSIONER FOR PATENTS

Washington, D.C. 20231

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
---------------------------------	-------------	---	---------------------

EXAMINER
----------

ART UNIT	PAPER
----------	-------

6

DATE MAILED:

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## DETAILED ACTION

### Notice to Applicant(s)

1. This application has been examined. Claims 1-12 are pending.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, and 6, are rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (5,987,383) in view of Dano (4,398,195).

As per claim 1, Keller et al. disclose a vehicle guidance apparatus for guiding an agricultural vehicle over a paddock along a number of paths, the paths being offset from each other by a predetermined distance, vehicle including steering means, apparatus including: position determining arranged to generate vehicle position data (see columns 1-2, lines 62-38), and guidance coupled to microprocessor and arranged to aid in guiding vehicle thereby reducing errors (see columns 3-6, lines 2-59). Keller et al. do not disclose data entry facilitating entry of an initial path. However, Dano discloses data entry facilitating entry of an initial path by an operator and a desired offset distance between paths, and processing coupled to position determining and operatively arranged to generate paths based on initial paths, and generating guidance signal indicative of errors in the position of the vehicle relative to one of paths (see columns 5-7, lines 20-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made by combining data entry facilitating entry of an initial path by an

Art Unit: 3661

operator and a desired offset distance between paths, and processing coupled to position determining and operatively arranged to generate paths based on initial paths, and generating guidance signal indicative of errors in the position of the vehicle relative to one of paths for guiding an agricultural vehicle, for example an aircraft, while engaged in pattern flying.

As per claim 2, Keller et al. do not disclose an indication of the direction of vehicle relative to a path closest to vehicle. However, Dano discloses microprocessor is further operatively arranged to provide an indication of the direction of vehicle relative to a path closest to vehicle (see columns 9-10, lines 30-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. by combining microprocessor is further operatively arranged to provide an indication of the direction of vehicle relative to a path closest to vehicle for easy to set up a baseline and the aircraft flies over the entire predetermined flight pattern base on the baseline.

As per claim 3, Dano discloses paths are straight parallel lines (see columns 3-5, lines 61-19).

As per claim 6, Keller et al. disclose guidance comprises a human interface for converting guidance signal to a format indicating error to a human operator of vehicle (see columns 7-8, lines 17-29).

4. Claim 4 is rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (5,987,383), and Dano (4,398,195) as applied to claim 1 above, and further in view of Keller et al.(6,087,984).

As per claim 4, Keller et al. ('383), and Dano do not disclose path are concentric polygons. However, Keller et al. ('984) disclose path are concentric polygons (see the abstract;

Art Unit: 3661

and columns 2-3, lines 63-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. ('383) by combining path are concentric polygons to for efficiently dispensing chemicals or crop to variety of agricultural fields geometry.

5. Claims 5,7, and 10-12, are rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (5,987,383), and Dano (4,398,195) as applied to claim 1 above, and further in view of Winslow (6,314,348).

As per claim 5, Keller et al. ('383), and Dano do not disclose a radio modem. However, Winslow discloses position determining includes a satellite based geographical positioning system receiver (see columns 2-3, lines 52-39), and a radio modem operatively receiving positional correction factor data (see columns 4-5, lines 66-47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. ('383), and Dano by combining position determining includes a satellite based geographical positioning system receiver, and a radio modem operatively receiving positional correction factor data for accurately guiding an agricultural vehicle over a predetermined path.

As per claim 7, Keller et al. ('383), and Dano do not disclose a controllable steering. However, Winslow discloses guidance comprises a controllable steering coupled to processing and arranged to steer vehicle in a direction reducing error (see the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. ('383), and Dano by combining guidance comprises a controllable steering coupled to processing and arranged to steer vehicle in a direction reducing error for guiding the

Art Unit: 3661

vehicle along a desired path to make sure the vehicle go through every area in the path to avoid overlap or the path not go through.

As per claim 10, Winslow discloses controllable steering includes at least one solenoid mechanically coupled to steering, solenoid responsive to guidance signal (see columns 2-3, lines 51-59).

As per claims 11-12, Keller et al. ('383), and Dano do not disclose steerage feedback sensors. However, Winslow discloses steerage feedback sensors operative to generate feedback signals indicative of orientation of steerable wheels or tracks, microprocessor being responsive to steerage feedback signals (see columns 5-8, lines 48-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. ('383), and Dano by combining steerage feedback sensors operative to generate feedback signals indicative of orientation of steerable wheels or tracks, microprocessor being responsive to steerage feedback signals to provide a balance steering wheel to generate a desired correction.

6. Claim 8 is rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (5,987,383), Dano (4,398,195), and Winslow (6,314,348) as applied to claim 7 above, and further in view of Lestrade (4,558,760).

As per claim 8, Keller et al. ('383), and Dano do not disclose relative position. However, Lestrade discloses relative position determining mountable to vehicle, generating positional data signals indicative of the position of vehicle, microprocessor being responsive to positional data signals (see columns 3-6, lines 41-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. ('383), and Dano by combining relative position determining mountable to vehicle, generating positional data signals

Art Unit: 3661

indicative of the position of vehicle, microprocessor being responsive to positional data signals for detecting deviation of the vehicle position relative to a path fixed.

7. Claim 9 is rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (5,987,383), Dano (4,398,195), Winslow (6,314,348), and Lestradet (4,558,760) as applied to claim 8 above, and further in view of Kyrtos et al. (5,375,059).

As per claim 9, Keller et al. ('383), Dano, Winslow, and Lestradet do not disclose accelerometers. However, Kyrtos et al. disclose relative position determining comprises a number of accelerometers (see columns 16-17, lines 54-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. ('383), and Dano by combining relative position determining comprises a number of accelerometers for the accurate determination of the agricultural vehicle relative to a path.

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

. Reinaud (4,706,773)

. Kamimura et al. (5,019,990)

. Teach (5,334,987)

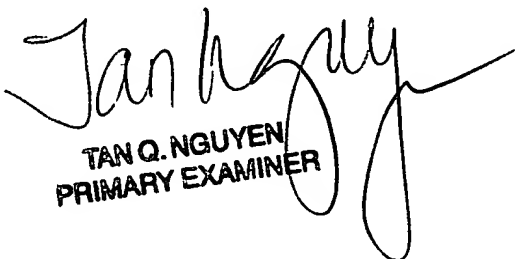
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30PM), off every other Friday.



Art Unit: 3661

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on 703-308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

  
TAN Q. NGUYEN  
PRIMARY EXAMINER

/dt  
December 11, 2002